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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

EREZO, DARWIN P

ART UNIT

PAPER NUMBER

3731

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/003,437

Applicant(s)

SPRINKEL ET AL.

Examiner

Darwin P. Erez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-31 and 38-52 is/are pending in the application.
- 4a) Of the above claim(s) 38,39,41,47,50 and 51 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-31, 40, 42-46, 48, 49 and 52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 38, 39, 41, 47, 50 and 51 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 12/21/05.
2. This application contains claims that are drawn to an invention nonelected with traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 26, 27, 29, 31, 40, 42-46, 48, 49 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,656,738 to Vogel et al. in view of US 5,142,143 to Fite et al. and US 4,477,961 to van Breest Smallenburg, and as evidenced by US 4,381,233 to Adachi et al.

Vogel teaches a method of manufacturing a fluid vaporizing device comprising: providing a body with a fluid passage (Fig. 3A), the fluid passage having an inlet opening and an outlet opening; and providing a tubular heater by depositing a thin resistive film inside the passage (col. 6, lines 41-42), the heater being operable to

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volatilize fluid in the passage by passing an electrical current through the film. Vogel also teaches conductive contacts **86**.

Vogel is silent with regards to the volumetric capacity of the fluid passage (preconcentrator tube).

However, as recited in the applicant's remarks dated 7/7/05, Fite teaches preconcentrator tubes having an inner diameter of 1.5 mm with a length of 37 mm. Applicant noted that the resulting volume of the tubes would be 260 ml. However, this is incorrect. The following equations are provided to calculate a volume (capacity) of a cylinder:

$$\text{Volume} = \text{Area of base (mm}^2\text{)} \times \text{Height (mm)}$$

$$\text{Area} = \text{Pi} \times \text{Radius}^2$$

Using the dimensions provided:

$$\text{Radius} = \frac{1}{2} \text{ diameter} = \frac{1}{2} (1.5\text{mm}) = .75\text{mm}$$

$$\text{Height of the tube} = 37 \text{ mm}$$

Calculation for Area:

$$\text{Area} = \text{Pi} \times (0.75 \text{ mm})^2 = 1.77 \text{ mm}^2$$

Calculation for Volume:

$$\text{Volume} = 1.77 \text{ mm}^2 \times 37\text{mm} = 65.38 \text{ mm}^3$$

Converting cubic mm (mm³) to mL:

$$1 \text{ mL} = 1 \text{ cc} = 10 \times 10 \times 10 \text{ mm}.$$

$$1 \text{ mL} = 1000 \text{ mm}^3$$

Therefore :

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$$X = \frac{(1 \text{ mL})}{(1000 \text{ mm}^3)} \times (65.38 \text{ mm}^3) = \mathbf{0.065 \text{ mL}}$$

As clearly shown above, Fite teaches a concentrator tube having a volume that falls within the range recited by the applicant. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use any well known concentrator tubes, including the tubes of Fite, since using a well known concentrator tube in the device of Vogel would be well within the level of one of ordinary skill in the art. Furthermore, it was the applicant that provided the Fite reference to show what was relevant in the art.

Vogel is also silent with regards to any step of forming a passage in a body (rectilinear). However, forming tubes from a rectilinear body is well known in the art. For example, van Breest Smallenburg teaches that drilling a channel/passage into a block or plate to form a capillary tube is well known (col. 1, lines 21-26). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a passage from a rectilinear block since it is well known in the art to form passages or channels in a rectilinear block.

Vogel also teaches the heater being formed from an ITO material, which is a metal solution of Indium Tin Oxide that is coated/introduced into the tube. However, Vogel is silent with regards to the specifics on how the ITO is coated. However, it is well known in the art for to form an ITO layer by resistance heating evaporation (as evidenced by Adachi; col. 6, lines 56-66). Thus, it would be obvious to one of ordinary skill in the art at the time the invention was made to form an ITO layer with any well

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known methods since choosing a specific method would be a mere design choice. The applicant has not provided any criticality to any specific method of forming a resistive heater, especially since various species of the method is provided.

Regarding the method of forming a capillary sized fluid passage, it is noted that Vogel teaches a preconcentrator tube having a similar area to that of the recited claims. Thus, it is viewed as a capillary sized tube.

Vogel/Fite discloses the claimed invention except for the fluid passage having a transverse cross-sectional area of about 2×10^{-2} to $8 \times 10^{-1} \text{ mm}^2$. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrive at the recited range, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

It is also noted that preconcentrator tube could be used separately from the device of Vogel to vaporize medicament and be used as an inhaler.

5. Claims 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vogel et al./Fite et al./van Breest Smallenburg, and in further view of US 3,629,781 to Helgeland.

The above combination is silent with regards to the heater being formed from platinum salt solution and heating the layer formed from the platinum salt solution to form the resistive film. However, Helgeland teaches a method of forming a metal film

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resistor by depositing a layer of precious metal salts (col. 2, line 16), such as platinum salts (col. 2, line 59) and heating the layer to form the resistive film (col. 2, lines 21-24). Therefore, it would have been an obvious matter of design choice to one of ordinary skill in the art at the time the invention was made to use a platinum salt solution to form the resistive heater in Vogel's device since the applicant has not disclosed that the resistive layer formed from platinum provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either the resistive layer formed from ITO or the claimed resistive layer formed from platinum because both resistive layers perform the same function of a heater.

Response to Arguments

6. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

7. Applicant's arguments with respect to claims 26-31, 40, 42-46, 48, 49 and 52 have been considered but are moot in view of the new ground(s) of rejection.

8. Applicant's arguments with respect to claims 38, 39, 41, 47, 50, and 51 are moot since the claims are withdrawn from consideration, as stated in the previous Office action.

9. It is also noted that this communication is still in response to the claim amendments filed on 7/7/05, which necessitated the new grounds of rejection presented in the previous Office action and this Office action. Therefore, the Finality of this Office action is proper.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darwin P. Erez who's telephone number is (571) 272-4695. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anh Tuan T. Nguyen can be reached on (571) 272-4963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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SUPERVISORY PATENT EXAMINER
EJ/26/06